UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/580,932	05/25/2000	Pierre H. Chenes	19414-04841	8653

758 7590 03/24/2004

FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

EXAMINER	
PERILLA, JASON M	
ART UNIT	**PAPER NUMBER**
2634	9

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/580,932	CHENES, PIERRE H.	
	Examiner	Art Unit	
	Jason M Perilla	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *32* is/are allowed.

6)☒ Claim(s) *1-31 and 33-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 May 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-51 are pending in the instant application.

Response to Arguments

2. Applicant's arguments regarding the rejections under 35 U.S.C. 112, Paragraph 1 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. Although it is noted by the examiner that the term "code" of a "code generating event" in claims 2, 5, 11, 14, 21, 29, 31, and 33 could be mistaken by one skilled in the art as an event of microcontroller machine code generation or software generation, in view of the details of the specification and the applicant's argument, the "code generating event" is acceptably understood to be "an occurrence" or simply as "an event".

3. Applicant's arguments, see page 14, filed January 22, 2004, with respect to the 35 U.S.C 103(a) rejection over Mori (4754268) in view of Gilley (5781458) of claims 1, 2, 5, 9, 19-21, 23, 29-31, 33-38, and 40 have been fully considered and are persuasive. Hence, the rejection has been withdrawn. The examiner makes note of the persuasive and non-persuasive points of the argument.

One skilled in the art is able to see that the frequency selective switches of Mori are analogous to an "identifier code". Further, one skilled in the art understands that the use of different frequencies in the system of Mori is used for frequency diversity *and* for the identification of particular transmitter/receiver pairs. The fact that the switches in the system of Mori are not required in the system of Mori in view of Gilley is irrelevant. One skilled in the art understands that by the use of a random identifier code, select switches

would not need to be used. Also, none of the claims describe how the transmitter receiver pair "synchronize" themselves with the random identifier code. Therefore, the prior art is not required to meet this limitation in the claims. The claims do not depend on how the transmitter/receiver pair agree on the random identifier code.

The argument that the teachings of Gilley fail to meet the limitation of "randomness that is derived from tolerances associated with components" is not persuasive. In fact, the random numbers or random identifier code that is obtained by Gilley is directly related to the tolerances associated with the RC components as shown in figure 1 (refs. R and C). The randomness derived in the system of Gilley is at least as much dependent upon the tolerances inherent in the RC components as it is in the system of the applicant's. The RC components of Gilley contribute to an inherent randomness property of the circuit, and one skilled in the art further recognizes other inherent tolerances in the system such as system voltages and oscillator frequencies as well as environmental factors such as temperature that will cause "randomness". The applicant argues that the RC circuit of Gilley is created to vary over time. However, it is still applied to create a random value or random identifier code. The system does not need to derive the same random identifier code each time because any one of the random identifier codes can be stored in the memory and utilized a plurality of times for identification. Therefore, by the use of the stored random identifier code, the communication may continue until another random identifier code should need to be derived.

The applicant argues that the system of Mori in view of Gilley does not disclose a random identifier code that is included in the transmitted information. Indeed, in the system of Mori in view of Gilley, the random identifier code is used to alter a transmission frequency. *The random identifier code is never part of the transmitted information. For this reason*, the 35 U.S.C 103(a) rejection over Mori in view of Gilley of claims 1, 2, 5, 9, 19-21, 23, 29-31, 33-38 has been withdrawn.

However, a new rejection is made over Lin et al (5189543) in view of Gilley.

4. Applicant's arguments, see page 20, filed January 22, 2004, with respect to the 35 U.S.C 103(a) rejection over Mori in view of Gilley and in further view of Grider et al (5515540) of claims 3, 4, 7, 8, and 22 have been fully considered and are persuasive. Hence, the rejection has been withdrawn. The examiner makes note of the persuasive and non-persuasive points of the argument.

The argument that Leifer in view Gilley fail to meet the limitation of"randomness that is derived from tolerances associated with components" is not persuasive for the same reasons as applied above with respect to the 35 U.S.C 103(a) rejection over Mori in view of Gilley of claims 1, 2, 5, 9, 19-21, 23, 29-31, 33-38, and 40. Indeed, Gilley discloses the limitation of"randomness that is derived from tolerances associated with components".

The applicant argues that the system of Mori in view of Gilley and in further view of Grider et al does not disclose a random identifier code that is included in the transmitted information. Indeed, in the system of Mori in view of Gilley and in further view of Grider et al, the random identifier code is used to alter a transmission frequency.

The random identifier code is never part of the transmitted information. For this reason, the 35 U.S.C 103(a) rejection over Mori in view of Gilley and in further view of Grider et al of claims 3, 4, 7, 8, and 22 has been withdrawn.

However, a new rejection is made over Lin et al in view of Gilley and in further view of Grider et al.

5. Applicant's arguments, see page 22, filed January 22, 2004, with respect to the 35 U.S.C 103(a) rejection over Mori in view of Gilley and in further view of Church (3659863) of claim 6 have been fully considered and are persuasive. Hence, the rejection has been withdrawn. The examiner makes note of the persuasive and non-persuasive points of the argument.

The argument that Mori in view Gilley fail to meet the limitation of "randomness that is derived from tolerances associated with components" is not persuasive for the same reasons as applied above with respect to the 35 U.S.C 103(a) rejection over Mori in view of Gilley of claims 1, 2, 5, 9, 19-21, 23, 29-31, 33-38, and 40. Indeed, Gilley discloses the limitation of "randomness that is derived from tolerances associated with components".

The applicant states that Church does not describe "randomness that is derived from tolerances associated with components", and the examiner agrees. However, the teaching of Church is not of how randomness is derived. Rather, the teaching of Church is that of a counter where the value of a counter is the random number or the random identifier code. So, Church teaches that the output value of a timer is a random identifier code.

The applicant argues that the system of Mori in view of Gilley and in further view of Church does not disclose a random identifier code that is included in the transmitted information. Indeed, in the system of Mori in view of Gilley and in further view of Church, the random identifier code is used to alter a transmission frequency. The random identifier code is never part of the transmitted information. For this reason, the 35 U.S.C 103(a) rejection over Mori in view of Gilley and in further view of Church of claim 6 has been withdrawn.

However, a new rejection is made over Lin et al in view of Gilley and in further view of Church.

6. Applicant's arguments, see page 23, filed January 22, 2004, with respect to the 35 U.S.C 103(a) rejection over Leifer et al (6280327) in view of Gilley of claims 10, 11, 14, 17, 24-26, 28, 39, and 41 have been fully considered and are persuasive. Hence, the rejection has been withdrawn. The examiner makes note of the persuasive and non-persuasive points of the argument.

The argument that Leifer et al in view Gilley fail to meet the limitation of "randomness that is derived from tolerances associated with components" is not persuasive for the same reasons as applied above with respect to the 35 U.S.C 103(a) rejection over Mori in view of Gilley of claims 1, 2, 5, 9, 19-21, 23, 29-31, 33-38, and 40. Indeed, Gilley discloses the limitation of "randomness that is derived from tolerances associated with components".

The applicant argues that the system of Leifer et al in view of Gilley does not disclose a random identifier code that is included in the transmitted information. Indeed,

in the system of Leifer et al in view of Gilley, the random identifier code is used to alter a transmission frequency. The random identifier code is never part of the transmitted information. Alternatively, if the coding scheme was altered as suggested by Leifer et al (col. 6, lines 15-20), it is likely that the modulation technique would be altered, and the random identifier code would not be present is the transmission directly. For this reason, the 35 U.S.C 103(a) rejection over Leifer et al in view of Gilley of claims 10, 11, 14, 17, 24-26, 28, 39, and 41 has been withdrawn.

However, a new rejection is made over Lin et al in view of Gilley and in further view of Russell (5481265).

7. Applicant's arguments, see page 29, filed January 22, 2004, with respect to the 35 U.S.C 103(a) rejection over Leifer et al in view of Gilley and in further view of Grider of claims 12, 13, 16, 17, and 27 have been fully considered and are persuasive. Hence, the rejection has been withdrawn. The examiner makes note of the persuasive and non-persuasive points of the argument.

The argument that Leifer et al in view Gilley and in further view of Grider fail to meet the limitation of "randomness that is derived from tolerances associated with components" is not persuasive for the same reasons as applied above with respect to the 35 U.S.C 103(a) rejection over Mori in view of Gilley of claims 1, 2, 5, 9, 19-21, 23, 29-31, 33-38, and 40. Indeed, Gilley discloses the limitation of "randomness that is derived from tolerances associated with components".

The applicant argues that the system of Leifer et al in view of Gilley and in further view of Grider does not disclose a random identifier code that is included in the

transmitted information. Indeed, in the system of Leifer et al in view of Gilley and in further view of Grider, the random identifier code is used to alter a transmission frequency. The random identifier code is never part of the transmitted information. For this reason, the 35 U.S.C 103(a) rejection over Leifer et al in view of Gilley and in further view of Grider of claims 12, 13, 16, 17, and 27 has been withdrawn.

However, a new rejection is made over Lin et al in view of Gilley, in further view of Russell, and in further view of Grider.

8. Applicant's arguments, see page 30, filed January 22, 2004, with respect to the 35 U.S.C 103(a) rejection over Leifer et al in view of Gilley and in further view of Church of claim 15 have been fully considered and are persuasive. Hence, the rejection has been withdrawn. The examiner makes note of the persuasive and non-persuasive points of the argument.

The argument that Leifer et al in view Gilley and in further view of Church fail to meet the limitation of"randomness that is derived from tolerances associated with components" is not persuasive for the same reasons as applied above with respect to the 35 U.S.C 103(a) rejection over Mori in view of Gilley of claims 1, 2, 5, 9, 19-21, 23, 29-31, 33-38, and 40. Indeed, Gilley discloses the limitation of"randomness that is derived from tolerances associated with components".

The applicant argues that the system of Leifer et al in view of Gilley and in further view of Church does not disclose a random identifier code that is included in the transmitted information. Indeed, in the system of Leifer et al in view of Gilley and in further view of Grider, the random identifier code is used to alter a transmission

frequency. The random identifier code is never part of the transmitted information. For this reason, the 35 U.S.C 103(a) rejection over Leifer et al in view of Gilley and in further view of Church of claim 15 has been withdrawn.

However, a new rejection is made over Lin et al in view of Gilley, in further view of Russell, and in further view of Church.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 2, 5, 8, 9, 19-21, 23, 29-31, 33-38, 40, 42-45, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (5189543) in view of Gilley (5781458).

Regarding claim 1, Lin et al discloses a wireless communications system (abstract–"wireless keyboard") comprising: a transmitter circuit (fig. 1, ref. 4; col. 1, lines 47-51) for transmitting information and generating a random identifier code or "ID code" (col. 1, lines 60-65), wherein the random identifier code is included in the transmitted information (col. 1, lines 47-51; col. 2, lines 33-43). Lin et al does not disclose that the random identifier code having randomness that is derived from tolerances associated with components included in the transmitter circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit

connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome without the need for select switches. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit of Gilley in the transmission circuit of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 2, Lin et al in view of Gilley disclose the limitations of claim 1 as applied above. Further, Gilley discloses a micro-controller (fig. 1, ref. 16) unit having a first 1/O port, wherein in response to a code generating event (fig. 3, "interrupt"; col. 4, lines 33-36) being detected at the first 1/O port, a process running in the micro-controller unit generates the random identifier code (fig. 3; col. 4, lines 37-47).

Regarding claim 5, Lin et al in view of Gilley disclose the limitations of claim 2 as applied above. Further, Gilley discloses that the micro-controller unit includes an N-bit timer having an output value that is read in response to the code generating event being detected at the first I/O port (fig. 3; col. 4, lines 37-47).

Regarding claim 8, Lin et al in view of Gilley disclose the limitations as described in claim 1 above. Further, Gilley discloses the use of a microcontroller (DSP) for the generation of the random identifier code. It is inherent that a microcontroller has a type of storage area (RAM) for storing information such as a random identifier code because the use of such a storing area is required for the operation of the microcontroller.

Regarding claim 9, Lin et al in view of Gilley disclose the limitations of claim 1 as applied above. Further, Lin et al discloses that the transmitter circuit is included in a wireless keyboard (col. 1, lines 45-50).

Regarding claim 19, Lin et al discloses a method for distinguishing transmissions of a wireless transmitter (abstract), the method comprising: generating an identifier code; and embedding the random identifier code in the transmissions of the wireless transmitter (col. 1, lines 47-50). Lin et al does not disclose generating a *random* identifier code having randomness that is derived from tolerances associated with components included in the wireless transmitter. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly,

interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit as taught by Gilley in the transmission circuit of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 20, Lin et al in view of Gilley disclosed the limitations of claim 19 as applied above. Further, the micro-controller disclosed by Gilley generates a random identifier code using an algorithm (fig. 3). It is inherent that the micro-controller requires memory to perform such an algorithm that is shown in figure 3. The method that the micro-controller uses to perform the algorithm requires that the random identifier code is stored in a storage area (i.e. RAM) within the micro-controller, and hence, within the wireless transmitter.

Regarding claim 21, Lin et al in view of Gilley disclosed the limitations of claim 19 as applied above. Further, Gilley discloses a micro-controller unit having an I/O port (fig. 1), and that the generating step is responsive to an event being detected at an I/O port (fig. 3; col. 4, line 37).

Regarding claim 23, Lin et al in view of Gilley disclose the limitations in claim 19 as applied above. Further, Lin et al discloses that the transmitter circuit is included in a wireless keyboard (col. 1, lines 44-65).

Regarding claim 29, Lin et al discloses a wireless communications system between a wireless keyboard and a computer (abstract; col. 1, lines 44-65). Lin et al does not disclose a computer-readable medium having instructions stored thereon

which, when executed by a processor included in a wireless communications system, cause the processor to perform the steps of responsive to a code generating event, receiving data produced by the wireless communications system, wherein the received data has randomness that is derived from tolerances associated with components included in the wireless communications system; generating a random identifier code based on the received data; and storing the random identifier code in a storage area included in the wireless communications system. However, Gilley does teach computer readable media having stored instructions that are executed in response to an event to generate a random identifier code using data gathered having randomness derived in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, the micro-controller disclosed by Gilley generates a random identifier code using an algorithm executed from instructions stored on computer readable media (fig. 3). It is inherent that the micro-controller requires memory (computer readable media) to perform such an algorithm that is shown in figure 3. The method that the micro-controller uses to perform the algorithm requires that the random identifier code is stored in a storage area (i.e. RAM) within the micro-controller, hence the processor contains "computer readable media having stored instructions that are executed in response to an event". Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1,

lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier program on computer readable medium as taught by Gilley in the transmission circuit of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 30, Lin et al in view of Gilley disclose the limitations of claim 29 as applied above. Lin et al further discloses that the random identifier code is embedded in the transmission of the system for the purpose of identifying the transmission among a plurality of similar transmissions (col. 1, line2 45-65; col. 2, lines 65-68).

Regarding claim 31, Lin et al in view of Gilley disclose the limitations of claim 29 as applied above. Further, Gilley discloses a circuit including a micro-controller having a first I/O port used to detect an event (fig. 3; col. 4, lines 37-46).

Regarding claim 33, Lin et al discloses a wireless communications system comprising: a transmitter circuit for transmitting information and generating an identifier code (col. 1, lines 45-65), wherein the identifier code is included in the transmitted information (col. 1, lines 45-65); and a receiver circuit (fig. 2, ref. 20) for, responsive to received information having the identifier code (col. 2, lines 65-68), reporting that received information to a receiver host or computer. Lin et al does not disclose the generation of a *random* identifier code having randomness that is derived from

tolerances associated with components included in the transmitter circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit as taught by Gilley in the transmission circuit of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 34, Lin et al discloses an electronic communication system for generating an identifier code (col. 1, lines 45-65), the system comprising: a first circuit (fig. 1; "wireless keyboard") for communicating information and generating an identifier code (col. 2, lines 33-43); and a second circuit (fig. 2) communicatively coupled to the first circuit, the second circuit for receiving the information communicated by first circuit, wherein the information includes the identifier code (col. 2, lines 43-68). Lin et al does not disclose that the identifier code is a *random* identifier code. However, Gilley does

teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit as taught by Gilley in the transmission circuit of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 35, Lin et al in view of Gilley disclose the limitations of claim 34 as applied above. Further, Lin et al discloses that the first circuit (fig. 1; ref. 1) and the second circuit (fig. 2; ref. 24) each have a storage area for storing the random identifier code (micro-controller). It is inherent that the ID code is stored in both the first circuit and the second circuit so that the two circuits are able to communicate.

Regarding claim 36, Lin et al discloses a method for associating a transmitter with a receiver, wherein the transmitter and the receiver are part of a wireless communications system (col. 1, lines 45-65), the method comprising: generating an

identifier code (col. 2, lines 33-43); and assigning the identifier code to the transmitter and the receiver thereby creating a transmitter-receiver pair (col. 2, lines 44-68). Lin et al does not disclose that the identifier code is a *random* identifier code. However, Gilley does teach a method that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code method as taught by Gilley in the transmitter/receiver pair method of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 37, Lin et al in view of Gilley disclose the limitations of claim 36 as applied above. Further, Lin et al discloses storing the random identifier code in a storage area in the transmitter (fig. 1, ref. 1); and storing the random identifier code in a storage area in the receiver (fig. 2, ref. 24). It is inherent that the micro-controller in the transmitter must have the ID code in a storage area in the transmitter. For instance, the

micro-controller of Gilley performs the algorithm of figure 3. The algorithm requires that the ID code is stored into memory because it is compared against previous ID codes (fig. 3, ref. 3-12). In the case of the receiver, it is required that the ID code is stored in memory because it is compared against the ID code transmitted by the transmitter (Lin et al; col. 2, lines 65-68).

Regarding claim 38, Lin et al discloses a wireless communications transmitter system comprising: a transmitter circuit for transmitting information and generating an identifier code (col. 1, lines 45-65), wherein the identifier code is included in the transmitted information (col. 1, lines 45-65). Lin et al does not disclose the generation of a *random* identifier code having randomness that is derived from tolerances associated with components included in the transmitter circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit as taught by

Gilley in the transmission circuit of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 40, Lin et al discloses a method for distinguishing transmissions of a wireless transmitter means (abstract), the method comprising: generating an identifier code; and embedding the random identifier code in the transmissions of the wireless transmitter means (col. 1, lines 47-50). Lin et al does not disclose generating a *random* identifier code having randomness that is derived from tolerances associated with components included in the wireless transmitter means. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit of Gilley in the transmission circuit means of Lin et al because it provides a random identifier code that

could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 42, Lin et al discloses a wireless communications system (abstract) comprising: a receiver (fig. 2; col. 2, lines 48-68) circuit for receiving information and detecting a random identifier or "ID code", wherein the random identifier code is included in the received information (col. 2, lines 64-68; col. 1, lines 47-51; col. 2, lines 33-43)). Lin et al does not disclose the random identifier code having randomness that is derived from tolerances associated with components included in a communications circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome without the need for select switches. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code of Gilley in the communications circuit of Lin et al because it provides a random identifier code that

could take the place of select switches for distinguishing transmissions between a plurality of users.

Regarding claim 43, Lin et al in view of Gilley disclose the limitations of claim 42 as applied above. Further, in the wireless communications system of Lin et al in view of Gilley the communication circuit comprises a transmitter (fig. 1) for sending the received information and for including the random identifier code in the information (col. 1, lines 47-51; col. 2, lines 33-43).

Regarding claim 44, Lin et al in view of Gilley disclose the limitations of claim 42 as applied above. Further, in the wireless communications system of Lin et al in view of Gilley the communication circuit comprises a receiver (col. 3, lines 1-5). Lin et al discloses that both the receivers and the transmitters need to be "tuned' correspondingly to prevent interference from multiple users. If the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome without the need for select switches. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code of Gilley in the reception circuit of Lin et al because it provides a random identifier code that could take the place of select switches in the receiver for distinguishing transmissions between a plurality of users.

Regarding claim 45, Lin et al in view of Gilley disclose the limitations of claim 44 as applied above. Further, the micro-controller of Lin et al (fig. 2, ref. 24) as taught by Gilley discloses a micro-controller (fig. 1, ref. 16) unit having a first 1/O port, wherein in

response to a code generating event (fig. 3, "interrupt"; col. 4, lines 33-36) being detected at the first 1/O port, a process running in the micro-controller unit generates the random identifier code (fig. 3; col. 4, lines 37-47).

Regarding claim 48, Lin et al in view of Gilley disclose the limitations of claim 45 as applied above. Further, Gilley discloses that the micro-controller unit includes an N-bit timer having an output value that is read in response to the code generating event being detected at the first I/O port (fig. 3; col. 4, lines 37-47).

11. Claims 3-4, 7, 22, 46, 47, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al in view of Gilley, and in further view of Grider et al (5515540).

Regarding claims 3 and 4, Lin et al in view of Gilley disclose the limitations of claim 2 as applied above. Although Gilley does disclose a micro-controller (DSP), a micro-controller having a ROM for storing a set of instructions for carrying out the process or a RAM for storing the random identifier code is not explicitly disclosed. The inclusion of a ROM for storing program instructions and a RAM for working with program variables in a micro-controller is commonly known in the art. Further, Grider et al does disclose a micro-controller having both a ROM (fig. 1, ref. "embedded loader ROM") and a RAM (fig. 1, ref. "data registers (128 bytes)"). Therefore it would have been obvious for one of ordinary skill in the art at the time which the invention was made to use a micro-controller with a built in ROM and/or RAM as described by Grider et al for the transmission circuit of Lin et al in view of Gilley because such a micro-controller is common in the art and it leads to a simplicity of circuit design.

Regarding claim 7, Lin et al in view of Gilley disclose the limitations of claim 5 as applied above. Gilley does further disclose the N-bit timer being applied to a random code generator algorithm (fig. 3; col. 4, line 37). Gilley does not explicitly disclose that the algorithm is stored in the ROM of the microcontroller. It is obvious to one skilled in the art that the instructions used in a microcontroller (to perform an algorithm) are stored in ROM, and that most micro-controllers contain ROM for such a purpose. Additionally, Grider et al does disclose a microcontroller with internal ROM for the storage of instructions for a microcontroller (fig. 1, ref. "embedded loader ROM"). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a microcontroller with built in ROM as disclosed by Grider et al in the transmitter circuit of Lin et al in view of Gilley because such micro-controllers are very common in the art and it leads to simplicity of design. It would have been further obvious to one having ordinary skill in the art at the time the invention was made to store the algorithm for generating the random identifier code using the N-bit timer in the ROM of the microcontroller because the ROM is intended to be used for storing microcontroller instructions.

Regarding claim 22, Lin et al in view of Gilley disclosed the limitations of claim 21 as applied above. Gilley discloses the use of a microcontroller generating a random identifier code pursuant to an algorithm carried out pursuant to a set of instructions (fig. 3; col. 4, line 37). It is commonly known in the art that micro-controllers contain ROM memory for the storage of the instructions to be carried out. Gilley discloses a microcontroller and a set of instructions used to generate the random identifier code, but

does not explicitly disclose the microcontroller having ROM for the storage of the instructions. However, Grider et al does disclose a microcontroller having ROM (fig. 1, ref. "embedded loader ROM"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a microcontroller having ROM such as the one disclosed by Grider et al with for the microcontroller used by Lin et al in view of Gilley because a microcontroller having ROM for storing program instructions is very common and makes for simplicity of circuit design.

Regarding claims 46 and 47, Lin et al in view of Gilley disclose the limitations of claim 45 as applied above. Although Gilley does disclose a micro-controller (DSP), a micro-controller having a ROM for storing a set of instructions for carrying out the process or a RAM for storing the random identifier code is not explicitly disclosed. The inclusion of a ROM for storing program instructions and a RAM for working with program variables in a micro-controller is commonly known in the art. Further, Grider et al does disclose a micro-controller having both a ROM (fig. 1, ref. "embedded loader ROM") and a RAM (fig. 1, ref. "data registers (128 bytes)"). Therefore it would have been obvious for one of ordinary skill in the art at the time which the invention was made to use a micro-controller with a built in ROM and/or RAM as described by Grider et al in the communications circuit of Lin et al in view of Gilley because such a micro-controller is common in the art and it leads to a simplicity of circuit design.

Regarding claim 50, Lin et al in view of Gilley disclosed the limitations of claim 48 as applied above. Gilley discloses the use of a microcontroller generating a random identifier code pursuant to an algorithm carried out pursuant to a set of instructions (fig.

3; col. 4, line 37). It is commonly known in the art that micro-controllers contain ROM memory for the storage of the instructions to be carried out. Gilley discloses a microcontroller and a set of instructions used to generate the random identifier code, but does not explicitly disclose the microcontroller having ROM for the storage of the instructions. However, Grider et al does disclose a microcontroller having ROM (fig. 1, ref. "embedded loader ROM"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a microcontroller having ROM such as the one disclosed by Grider et al with for the microcontroller used by Lin et al in view of Gilley because a microcontroller having ROM for storing program instructions is very common and makes for simplicity of circuit design. Further regarding claim 50, Gilley discloses an algorithm for generating a random identifier code which takes as input the output of the N bit timer (fig. 3; col. 4, line 37) and applies it as input to the process in the ROM of Gilley in view of Grider et al.

12. Claims 6 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al in view of Gilley, and in further view of Church (3659853).

Regarding claim 6, Lin et al in view of Gilley disclose the limitations of claim 5 as applied above. Although Gilley does disclose that the output value of the N-bit timer is read in response to the event being generated at the first I/O port as applied to claim 5, the value of the N-bit timer is not disclosed to be the random identifier code. However, Church does disclose a random identifier counter (col. 2, line 17) (inherently the same as a timer) of which the output of the counter is the random identifier code (fig. 2; col. 2, line 31). Therefore, it would have been obvious to one having ordinary skill in the art at

the time which the invention was made to use the output of the N-bit timer as the random identifier as shown by Church because it is the easiest and most obvious method to obtain a random identifier code from the N-bit timer depending upon a random event.

Regarding claim 49, Lin et al in view of Gilley disclose the limitations of claim 48 as applied above. Although Gilley does disclose that the output value of the N-bit timer is read in response to the event being generated at the first I/O port as applied to claim 48, the value of the N-bit timer is not disclosed to be the random identifier code. However, Church does disclose a random identifier counter (col. 2, line 17) (inherently the same as a timer) of which the output of the counter is the random identifier code (fig. 2; col. 2, line 31). Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to use the output of the N-bit timer as the random identifier as shown by Church because it is the easiest and most obvious method to obtain a random identifier code from the N-bit timer depending upon a random event.

13. Claims 10-11, 14, 17, 18, 24-26, 28, 39, 41, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al in view of Gilley and in further view of Russell (5481265).

Regarding claim 10, Lin et al discloses a wireless communications system (abstract–"wireless keyboard") comprising: a transmitter circuit (fig. 1, ref. 4; col. 1, lines 47-51) for transmitting information and generating a random identifier code or "ID code" (col. 1, lines 60-65), wherein the random identifier code is included in the transmitted

information (col. 1, lines 47-51; col. 2, lines 33-43). Lin et al does not disclose that the random identifier code having randomness that is derived from tolerances associated with components included in the transmitter circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit of Gilley in the transmission circuit of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Further regarding claim 10, Lin et al in view of Gilley disclose a wireless communication system comprising a transmitter but not a transceiver. However, Russell teaches a wireless communication system comprising a transceiver (fig. 4, ref. 112, 12). The use of a transceiver is well known in the art because it enables full duplex communications. In other words, it provides communication between a base unit and a

remote unit. Russell teaches that in the event that an ID code is not properly verified, the remote unit may request a re-transmission of the code (col. 15, lines 1-35). By the means of the transceiver as taught by Russell, full duplex communication may be obtained. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a transceiver as taught by Russell in the wireless communications system of Lin et al in view of Gilley because in the event of a communications error, a request to re-transmit could be requested.

Regarding claim 11, Lin et al in view of Gilley and in further view of Russell disclose the limitations of claim 10 as applied above. Further, Gilley discloses a circuit including a microcontroller having a first I/O port wherein response to an event at the port, a process running in the microcontroller unit generates the random identifier code (fig. 3; col. 4, line 37).

Regarding claim 14, Lin et al in view of Gilley and in further view of Russell disclose the limitations of claim 11 as applied above. Further, Gilley discloses a microcontroller having an N-bit timer that is read in response to an event being detected at the first I/O port (fig. 3; col. 4, line 37).

Regarding claim 17, Lin et al in view of Gilley and in further view of Russell disclose the limitations as described in claim 10 above. Further, Gilley discloses the use of a microcontroller (DSP) for the generation of the random identifier code. It is inherent that a microcontroller has a type of storage area (RAM) for storing information such as a random identifier code because the use of such a storing area is required for the operation of the microcontroller.

Regarding claim 18, Lin et al in view of Gilley and in further view of Russell disclose the limitations in claim 10 as applied above. Further, Lin et al discloses that the transceiver circuit is included in a wireless keyboard (col. 1, lines 44-65).

Regarding claim 24, Lin et al discloses a method for distinguishing transmissions of a transmitter included in a wireless communications system (abstract–"wireless keyboard"), the method comprising: generating a random identifier code or "ID code" (col. 1, lines 60-65), wherein the random identifier code is included in the transmitted information (col. 1, lines 47-51; col. 2, lines 33-43). Lin et al does not disclose that the random identifier code having randomness that is derived from tolerances associated with components included in the transmitter circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit of Gilley in method for distinguishing transmissions of Lin et al because it provides a random

identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Further regarding claim 24, Lin et al in view of Gilley disclose a method for distinguishing transmissions of a transmitter included in a wireless communications system but not a transceiver. However, Russell teaches a wireless communication system comprising a transceiver (fig. 4, ref. 112, 12). The use of a transceiver is well known in the art because it enables full duplex communications. In other words, it provides communication between a base unit and a remote unit. Russell teaches that in the event that an ID code is not properly verified, the remote unit may request a re-transmission of the code (col. 15, lines 1-35). By the means of the transceiver as taught by Russell, full duplex communication may be obtained. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a transceiver as taught by Russell in method for distinguishing transmissions of Lin et al in view of Gilley because in the event of a communications error, a request to re-transmit could be requested.

Regarding claim 25, Lin et al in view of Gilley and in further view of Russell disclose the limitations of claim 24 as applied above. Further, the microcontroller disclosed by Gilley generates a random identifier code using an algorithm (fig. 3). It is inherent that the microcontroller requires memory to perform such an algorithm that is shown in figure 3. The method that the microcontroller uses to perform the algorithm requires that the random identifier code is stored in a storage area (i.e. RAM) within the microcontroller, and hence, within the wireless transmitter.

Regarding claim 26, Lin et al in view of Gilley and in further view of Russell disclose the limitations of claim 24 as applied above. Further, Gilley discloses a microcontroller unit having an I/O port (fig. 1), and that the generating step is responsive to an event being detected at an I/O port (fig. 3; col. 4, line 37).

Regarding claim 28, Lin et al in view of Gilley and in further view of Russell disclose the limitations in claim 24 as applied above. Further, Lin et al discloses that the transceiver circuit is included in a wireless joystick (col. 1, lines 44-65).

Regarding claim 39, Lin et al discloses a wireless communications system (abstract–"wireless keyboard") comprising: a transmitter circuit means (fig. 1, ref. 4; col. 1, lines 47-51) for transmitting information and generating a random identifier code or "ID code" (col. 1, lines 60-65), wherein the random identifier code is included in the transmitted information (col. 1, lines 47-51; col. 2, lines 33-43). Lin et al does not disclose that the random identifier code having randomness that is derived from tolerances associated with components included in the transmitter circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen

among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit of Gilley in the transmission circuit means of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Further regarding claim 39, Lin et al in view of Gilley disclose a wireless communication system comprising a transmitter but not a transceiver. However, Russell teaches a wireless communication system comprising a transceiver means (fig. 4, ref. 112, 12). The use of a transceiver is well known in the art because it enables full duplex communications. In other words, it provides communication between a base unit and a remote unit. Russell teaches that in the event that an ID code is not properly verified, the remote unit may request a re-transmission of the code (col. 15, lines 1-35). By the means of the transceiver as taught by Russell, full duplex communication may be obtained. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a transceiver means as taught by Russell in the wireless communications system of Lin et al in view of Gilley because in the event of a communications error, a request to re-transmit could be requested.

Regarding claim 41, Lin et al discloses a method for distinguishing transmissions of a transmitter means included in a wireless communications system (abstract–'wireless keyboard'), the method comprising: generating a random identifier code or "ID code" (col. 1, lines 60-65), wherein the random identifier code is included in the

transmitted information (col. 1, lines 47-51; col. 2, lines 33-43). Lin et al does not disclose that the random identifier code having randomness that is derived from tolerances associated with components included in the transmitter circuit. However, Gilley does teach a circuit that generates a random identifier code derived from the randomness in the tolerances of the circuit (fig. 1; fig. 3; col. 3, lines 37-46). The tolerances of the RC circuit connected to the micro-controller shown in figure 1 inherently contribute to the randomness of the identifier code generated by the circuit. Further, Lin et al discloses that, "problems could occur if several users in the same area attempt to tune their transmitters and receivers to the same frequency" (col. 3, lines 1-5), and "the ID codes and carrier frequency associated with each channel is different" (col. 1, lines 60-61). Hence, if the ID codes and the corresponding frequencies were chosen among a plurality of choices randomly, interference between users could be overcome. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize the random identifier code circuit of Gilley in method for distinguishing transmissions means of Lin et al because it provides a random identifier code that could take the place of select switches for distinguishing transmissions between a plurality of users.

Further regarding claim 41, Lin et al in view of Gilley disclose a method for distinguishing transmissions of a transmitter means included in a wireless communications system but not a transceiver means. However, Russell teaches a wireless communication system comprising a transceiver means (fig. 4, ref. 112, 12). The use of a transceiver is well known in the art because it enables full duplex

communications. In other words, it provides communication between a base unit and a remote unit. Russell teaches that in the event that an ID code is not properly verified, the remote unit may request a re-transmission of the code (col. 15, lines 1-35). By the means of the transceiver as taught by Russell, full duplex communication may be obtained. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a transceiver means as taught by Russell in method for distinguishing transmissions of Lin et al in view of Gilley because in the event of a communications error, a request to re-transmit could be requested.

Regarding claim 51, Lin et al in view of Gilley disclose the limitations of claim 42 as applied above. Further, Lin et al discloses that the receiver circuit is included in a wireless keyboard (abstract). However, Lin et al does not disclose that the receiver is included in a device that possess the ability to *transmit* and receive signals via wireless communications. However, Russell teaches a wireless communication system comprising a transceiver means (fig. 4, ref. 112, 12). The use of a transceiver is well known in the art because it enables full duplex communications. In other words, it provides communication between a base unit and a remote unit. Russell teaches that in the event that an ID code is not properly verified, the remote unit may request a re-transmission of the code (col. 15, lines 1-35). By the means of the transceiver as taught by Russell, full duplex communication may be obtained. Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to utilize a transceiver means as taught by Russell in method for distinguishing

transmissions of Lin et al in view of Gilley because in the event of a communications error, a request to re-transmit could be requested.

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al in view of Gilley, in further view of Russell, and in further view of Church (3659853).

Regarding claim 15, Lin et al in view of Gilley and in further view of Russell disclose the limitations of claim 14 as applied above. Although Gilley does disclose that the output value of the N-bit timer is read in response to the event being generated at the first I/O port as applied to claim 5, the value of the N-bit timer is not disclosed to be the random identifier code. However, Church does disclose a random identifier counter (col. 2, line 17) (inherently the same as a timer) of which the output of the counter is the random identifier code (fig. 2; col. 2, line 31). Therefore, it would have been obvious to one having ordinary skill in the art at the time which the invention was made to use the output of the N-bit timer as the random identifier as shown by Church because it is the easiest and most obvious method to obtain a random identifier code from the N-bit timer depending upon a random event.

15. Claims 12, 13, 16, 17, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al in view of Gilley, in further view of Russell, and in further view of Grider et al.

Regarding claims 12 and 13, Lin et al in view of Gilley and in further view of Russell disclose the limitations of claim 11 as applied above. Although Gilley does disclose a micro-controller (DSP), a micro-controller having a ROM for storing a set of instructions for carrying out the process or a RAM for storing the random identifier code

is not explicitly disclosed. The inclusion of a ROM for storing program instructions and a RAM for working with program variables in a micro-controller is commonly known in the art. Further, Grider et al does disclose a micro-controller having both a ROM (fig. 1, ref. "embedded loader ROM") and a RAM (fig. 1, ref. "data registers (128 bytes)"). Therefore it would have been obvious for one of ordinary skill in the art at the time which the invention was made to use a micro-controller with a built in ROM and/or RAM as described by Grider et al for the transceiver circuit of Lin et al in view of Gilley and in further view of Russell because such a micro-controller is common in the art and it leads to a simplicity of circuit design.

Regarding claim 16, Lin et al in view of Gilley and in further view of Russell disclose the limitations of claim 14 as applied above. Gilley does further disclose the N-bit timer being applied to a random code generator algorithm (fig. 3; col. 4, line 37). Gilley does not explicitly disclose that the algorithm is stored in the ROM of the microcontroller. It is obvious to one skilled in the art that the instructions used in a microcontroller (to perform an algorithm) are stored in ROM, and that most micro-controllers contain ROM for such a purpose. Additionally, Grider et al does disclose a microcontroller with internal ROM for the storage of instructions for a microcontroller (fig. 1, ref. "embedded loader ROM"). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a microcontroller with built in ROM as disclosed by Grider et al in the transceiver circuit of Lin et al in view of Gilley and in further view of Russell because such micro-controllers are very common in the art and lead to simplicity of design. It would have been further

obvious to one having ordinary skill in the art at the time the invention was made to store the algorithm for generating the random identifier code using the N-bit timer in the ROM of the microcontroller because the ROM is intended to be used for storing microcontroller instructions.

Regarding claim 27, Leifer et al in view of Gilley and in further view of Russell disclosed the limitations of claim 26 as applied above. Further, Gilley discloses the use of a microcontroller generating a random identifier code pursuant to an algorithm carried out pursuant to a set of instructions (fig. 3; col. 4, line 37). It is commonly known in the art that micro-controllers contain ROM memory for the storage of the instructions to be carried out. Gilley discloses a microcontroller and a set of instructions used to generate the random identifier code, but does not explicitly disclose the microcontroller having ROM for the storage of the instructions. However, Grider et al does disclose a microcontroller having ROM (fig. 1, ref. "embedded loader ROM"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a microcontroller having ROM such as the one disclosed by Grider et al with for the microcontroller used by Lin et al in view of Gilley and in further view of Russell because a microcontroller having ROM for storing program instructions is very common and makes for simplicity of circuit design. Therefore, it is obvious that the instructions to be performed are stored on the ROM and that they will be executed from the ROM.

Allowable Subject Matter

16. Claim 32 is allowed in view of the prior art of record. The following is a statement of reasons for the indication of allowable subject matter:

A method of distinguishing transmissions of wireless communications by the means of using embedded codes to differentiate a particular transmission among a plurality of transmissions is well known in the art. Further, the method of creating these codes randomly is also well known in view of the cited prior art. However, the particular method using a microcontroller connected to an RC circuit by an I/O port that monitors the voltage of the RC circuit and utilizes a N-bit timer to generate the random codes in response to events that occur at the I/O port due to the RC circuit charging and discharging in the particular sequence as limited by claim 32 has not been found to be disclosed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (703) 305-0374. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Chin can be reached on (703) 305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M Perilla
March 18, 2004

jmp

STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600